

### **REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed August 23, 2004 (Paper No. 3). Upon entry of this response, claims 1-28, 31-28, 50-57, and 78-89 are pending in the application. In this response, claim 31 has been amended, claims 78-89 have been added and claims 29-30, 39-49, and 58-77 have been cancelled. Applicant respectfully requests that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

1. **Restriction Requirement**

The Examiner has required Applicant to elect to prosecute one of five groups of claims identified in the Office Action. In response to the restriction requirement, Applicant elects to prosecute the claims of Group I, corresponding to claims 1-28, 31-38 and 50-57. The claims corresponding to Groups II-V, namely claims 29-30, 39-49, and 58-77, are cancelled in this Response. Applicant expressly reserves the right to present the non-elected claims, or variants thereof, in continuing applications to be filed subsequent to the present application.

2. **Claim Objections**

Claims 31-38 are objected to because “nowhere does the Applicant teach a ‘fifth means for receiving a receiver input’.” Applicant has amended independent claim 31 to recite “fifth means for receiving a coefficient input.” Applicant respectfully asserts that this amendment overcomes the claim objection, and requests that the objection be withdrawn.

3. **Rejection of Claims 1, 31, and 50 under 35 U.S.C. §103**

Claims 1, 31, and 50 have been rejected under §103(a) as allegedly obvious over *Ikeda* (U.S. 6,118,825) in view of *Davis* (U.S. 4,545,054). Applicant respectfully traverses these

rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

Applicant respectfully submits that claims 1, 31, and 50 are allowable for at least the reason that the proposed combination of *Ikeda* in view of *Davis* does not disclose, teach, or suggest at least the feature of “a portion of the plurality of logic calculators being capable of receiving a coefficient input” as recited in claim 1 or the “means for receiving a coefficient input” as recited in claim 31 or “logic for receiving a coefficient input” as recited in claim 50. The Office Action alleges that these features are disclosed by FIG. 1 of *Davis*. (Office Action, p. 7, paragraph 3).

Applicant respectfully disagrees. FIG. 1 in *Davis* merely discloses a conventional convolutional encoder in which coefficients  $g_{10}$ - $g_{1n}$  and  $g_{20}$ - $g_{2n}$  are connected to modulo 2 adders. Applicant respectfully asserts that *Davis* does not teach, disclose, or suggest that these coefficients are *inputs* or that they are *received*.

The Office Action admits that *Ikeda* does not “explicitly teach the specific use of a portion of the plurality of logic calculators being capable of receiving a coefficient input”. (Office Action, p. 7, paragraph 3). Accordingly, the proposed combination of *Ikeda* in view of *Davis* does not teach the above-described features recited in claims 1, 31, and 50. Since the proposed combination does not teach at least these features, a *prima facie* case establishing an obviousness rejection by *Ikeda* in view of *Davis* has not been made. Thus, claims 1, 31, and 50 are not obvious under the proposed combination, and the rejection should be withdrawn.

4. Rejection of Claims 1-7, 10-21, 24-28, 31-35, 38, 50-54, and 57 under 35 U.S.C. §103

Claims 1-7, 10-21, 24-28, 31-35, 38, 50-54, and 57 have been rejected under §103(a) as allegedly obvious over *Herzberg* (U.S. 5,996,104) in view of *Khoury* (U.S. 5,912,898).

Applicant respectfully traverses these rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. Claim 16

Applicant respectfully submits that claim 16 is allowable for at least the reason that there is no motivation to combine *Herzberg* and *Khoury*. The Office Action alleges that the combination of *Herzberg* and *Khoury* makes claim 16 obvious, using the following reasoning. First the Office Action alleges that the convolutional encoder in *Herzberg* FIG. 4A discloses all the elements of claim 16 except for “a variable delay time element.” Next the Office Action alleges that “*Khoury*, in an analogous art, teaches a convolutional interleaver as required by the *Herzberg* patent using a variable delay (see Figure 1, *Khoury*).” (Office Action, p. 10, paragraph 3).

The Office Action then concludes from these premises that it would be obvious to replace the interleaver in *Herzberg* with the variable delay interleaver of *Khoury* to produce the claimed invention. The motivation given for this combination in the Office Action is that “the use of a variable time delay element; wherein the data input is received by the switch and directed to one of the plurality of convolutional encoders based on the variable time delay element would have

provided the opportunity to implement the convolutional interleaver required by the Herzberg patent.” (Office Action, p. 10, paragraph 3).

Applicant respectfully asserts that even if *Herzberg* “requires” an interleaver, *Herzberg* does not require a “variable delay element” as recited in claim 16. Thus, even assuming, *arguendo*, that *Khoury* teaches this missing element, the Office Action has not provided a credible motivation for combining a variable delay element with the conventional interleaver disclosed in FIG. 4A of *Herzberg*. Since the Office Action has not provided a credible motivation to combine the teachings of these two references, a *prima facie* case establishing an obviousness rejection by *Herzberg* in view of *Khoury* has not been made. Thus, claim 16 is not obvious under the proposed combination, and the rejection should be withdrawn.

b. Claims 1, 31, and 50

The elements of claims 1, 31, and 50 are not specifically discussed by the Office Action. Applicant assumes, *arguendo*, that claims 1, 31, and 50 are rejected under the same reasoning discussed in connection with claim 16, that is, that *Herzberg* FIG. 4A discloses all claimed elements except “the plurality of prior data inputs being subjected to a variable time delay” and “variably delaying a plurality of prior data inputs.”

The motivation given for this combination in the Office Action is that “the use of a variable time delay element; wherein the data input is received by the switch and directed to one of the plurality of convolutional encoders based on the variable time delay element would have provided the opportunity to implement the convolutional interleaver required by the Herzberg patent.” Applicant respectfully asserts that even if *Herzberg* “requires” an interleaver, *Herzberg* does not require “the plurality of prior data inputs being subjected to a variable time delay” as

recited in claim 1 or “means for variably delaying a plurality of prior data inputs” as recited in claim 31 or “logic for variably delaying a plurality of prior data inputs” as recited in claim 50.

Thus, even assuming, *arguendo*, that *Khoury* teaches these missing elements, the Office Action has not provided a credible motivation for combining a variable delay element with the conventional interleaver disclosed in FIG. 4A of *Herzberg*. Since the Office Action has not provided a credible motivation to combine the teachings of these two references, a *prima facie* case establishing an obviousness rejection by *Herzberg* in view of *Khoury* has not been made. Thus, claims 1, 31, and 50 are not obvious under the proposed combination, and the rejection should be withdrawn.

Since there is no motivation to combine these two references, a *prima facie* case establishing an obviousness rejection by *Herzberg* in view of *Khoury* has not been made. Thus, claims 1, 31, and 50 is not obvious under the proposed combination, and the rejection should be withdrawn.

c. Claim 57

Applicant respectfully submits that claim 57 is allowable for at least the reason that the proposed combination of *Ikeda* in view of *Davis* does not disclose, teach, or suggest at least the feature of “a variable plurality of path memories” as recited in claim 57. The Office Action does not specifically discuss this feature, nor specifically allege that this features is disclosed by either *Ikeda* or *Davis*. Applicant respectfully asserts that *Ikeda* does not discuss path memories at all, and also asserts that *Davis* does not disclose or suggest that the plurality of path memories is variable in number. Accordingly, the proposed combination of *Ikeda* in view of *Davis* does not teach the above-described features recited in claim 57. Since the proposed combination does not teach at least this feature, a *prima facie* case establishing an obviousness rejection by *Ikeda* in

view of *Davis* has not been made. Thus, claim 57 is not obvious under the proposed combination, and the rejection should be withdrawn.

d. Claims 2-7, 10-15, 17-21, 24-28, 32-35, 38, and 51-54

Since claims 1, 16, 31, and 50 are allowable for at least the reasons discussed above, Applicant respectfully submits that claims 2-7, 10-15, 17-21, 24-28, 32-35, 38, and 51-54 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 2-7, 10-15, 17-21, 24-28, 32-35, 38, and 51-54 be withdrawn.

5. Rejection of Claims 8, 9, 22, 23, 36, 37, 55, and 56 under 35 U.S.C. §103

Claims 8, 9, 22, 23, 36, 37, 55, and 56 have been rejected under §103(a) as allegedly obvious over *Herzberg* (U.S. 5,996,104) in view of *Khoury* (U.S. 5,912,898) and further in view of *Ross* (U.S. 4,901,319). Applicant respectfully traverses these rejections. Since claims 7, 21, 36, and 55 are allowable for at least the reasons discussed above, Applicant respectfully submits that claims 8, 9, 22, 23, 36, 37, 55, and 56 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 8, 9, 22, 23, 36, 37, 55, and 56 be withdrawn.

6. Newly Added Claims

Applicant submits that no new matter has been added in the new claims 78-89 and that new claims 78-89 are allowable over the cited references. Specifically, claim 78 is allowable for at least the reason that the cited references do not teach, disclose, or suggest the feature of “at

least one memory element configured to receive a series of data inputs from the node and to store the series of data inputs for a delay period, wherein the delay period is set by a remote receiver.”

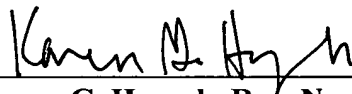
Claim 80 is allowable for at least the reason that the cited references do not teach, disclose, or suggest the feature of “at least one memory element configured to receive a series of data input bits and further configured to output the oldest bit in the series after a delay of  $M$  symbol times, where  $M$  is greater than 1.” Claim 85 is allowable for at least the reason that the cited references do not teach, disclose, or suggest the feature of “logically combining the data input bit  $X(m+M)$  and the outputted data input bit  $X(m)$ .” Claim 88 is allowable for at least the reason that the cited references do not teach, disclose, or suggest the feature of “an interleaved convolutional encoder configured to interleave the at least one data bit in the first plurality and the at least one data bit in the second plurality and to logically combine the interleaved bits.” Therefore, Applicant requests that the Examiner enter and allow the above new claims.

**CONCLUSION**

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-28, 31-38, 50-57, and 78-89 be allowed to issue. Although some dependent claim rejections and some obviousness rejections are explicitly addressed above, the omission of arguments for other claims is not intended to be construed as an implied admission that the Applicant agrees with the rejection or finding of obviousness for the respective claim or claims. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted,

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